

PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number Q77349	
Mail Stop AF Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Application Number 10/665,006	Filed September 22, 2003	
	First Named Inventor Tetsuya SHIOZAKI		
	Art Unit 1621	Examiner Chukwuma O. Nwaonicha	
<p style="text-align: center;">WASHINGTON OFFICE 23373 CUSTOMER NUMBER</p>			
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal</p> <p>The review is requested for the reasons(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p><input checked="" type="checkbox"/> I am an attorney or agent of record.</p> <p>Registration number 57,426</p> <p style="text-align: right;"><i>Hui Chen Wauters</i> _____ Signature</p> <p style="text-align: right;">_____ Hui C. Wauters Typed or printed name</p> <p style="text-align: right;">_____ (202) 293-7060 Telephone number</p> <p style="text-align: right;">_____ June 11, 2009 Date</p>			

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q77349

Tetsuya SHIOZAKI, et al.

Appln. No.: 10/665,006

Group Art Unit: 1621

Confirmation No.: 5832

Examiner: Chukwuma O. Nwaonicha

Filed: September 22, 2003

For: METHOD FOR PRODUCING 3-METHYLTHIOPROPANAL

PRE-APPEAL BRIEF REQUEST FOR REVIEW

MAIL STOP AF - PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Pursuant to the Pre-Appeal Brief Conference Program, and further to the Examiner's Final Office Action dated December 11, 2008, Applicants file this Pre-Appeal Brief Request for Review. This Request is also accompanied by the filing of a Notice of Appeal.

Applicants turn now to the rejection at issue:

Claims 1-5 are pending and on Appeal.

Claims 1-5 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hunt et al. (US 2,776,996) in view of GB 1,166,961 ("GB '961").

Appellants submit that this rejection should be reversed because Hunt et al. and GB '961 do not disclose or render obvious the present invention, either alone or in combination.

Present claim 1 relates to a method for producing a 3-methylthiopropional in a continuous manner, the method comprising the step of supplying an acrolein and a methyl mercaptan

together or sequentially with an acidic compound and a basic compound into a reaction system to react the acrolein with the methyl mercaptan, wherein *the basic compound is used in an amount of 0.3 mol or less per mol of the acidic compound.*

Hunt et al. and GB '961 fail to teach that a basic compound is used in an amount of 0.3 mol or less per mol of an acidic compound.

Specifically, Hunt et al. teaches that "[t]he base should be in excess of acetic acid, when the reactants are mixed in continuous operation" (column 2, line 71 to column 3, line 14). That is, Hunt et al. teaches that a basic compound is used in an amount of more than 1 mol per mol of the acidic compound in a continuous process. Hunt et al. teaches away from the presently claimed recitation of a basic compound being used in an amount of 0.3 mol per mol of an acidic compound.

As to GB '961, Example 1 of GB '961 teaches that pyridine is used in an amount of 0.51 mol per mol of acetic acid.

Accordingly, Hunt et al. and GB '961 are evidence that the claimed amount is contrary to the accepted wisdom. Proceeding contrary to accepted wisdom in the art is evidence of nonobviousness. See MPEP § 2145(X)(D)(3). As noted above, Hunt et al. teaches that the base should be in excess of acetic acid when the reactants are mixed in continuous operation, and Example 1 of GB '961 teaches that pyridine is used in an amount of 0.51 mol per mol of acetic acid. Accordingly, one of ordinary skill in the art would not have been motivated to use a base in an amount of 0.3 mol per mol of an acid, as required by the present claims.

One object of the present invention is to provide a method for producing 3-methylthiopropenal with high quality while suppressing the production of by-products having high boiling point. See, page 2, lines 9-12 of the specification.

In the Office Action of December 11, 2008, the Examiner noted that merely modifying the process conditions such as concentrations is not a patentable modification absent a showing of criticality.

However, the presently claimed amount of basic compound with respect to the acidic compound provides unexpectedly superior results and possesses criticality, as shown by the Examples and Comparative Examples of the present specification.

That is, Examples 1 and 2 and Comparative Examples 1 and 2 of the present specification provide evidence of unexpectedly superior results which rebuts any prima facie case of obviousness and confirm the patentability of the present invention.

Specifically, in Example 1 of the specification, a mixture of an acetic acid and a pyridine having a molar ratio of acetic acid/pyridine of 1/0.13 was employed. The resulting percentage of the by-product with high boiling point, 3-hydroxy-2-methylthiomethyl-4-pentenal, is 0.24 % and the resulting percentage of the by-product with high boiling point, 2-methylthiomethyl-5-methylthio-2-pentenal, is 0.06 %. In Example 2 of the specification, a mixture of an acetic acid and a pyridine having a molar ratio of acetic acid/pyridine of 1/0.15 was employed. The resulting percentage of 3-hydroxy-2-methylthiomethyl-4-pentenal is 0.23 % and the resulting percentage of 2-methylthiomethyl-5-methylthio-2-pentenal is 0.06 %.

In contrast, in Comparative Examples 1 and 2 of the specification, a mixture of an acetic acid and a pyridine having a molar ratio of acetic acid/pyridine of 1/0.51 was employed. In Comparative Example 1, the resulting percentage of 3-hydroxy-2-methylthiomethyl-4-pentenal is 0.73 % and the resulting percentage of 2-methylthiomethyl-5-methylthio-2-pentenal is 0.10 %. In Comparative Example 2, the resulting percentage of 3-hydroxy-2-methylthiomethyl-4-pentenal is 0.41 % and the resulting percentage of 2-methylthiomethyl-5-methylthio-2-pentenal is 0.12 %.

That is, Comparative Examples 1 and 2 show that the processes thereof result in higher percentages of the by-products with high boiling point, 3-hydroxy-2-methylthiomethyl-4-pentenal and 2-methylthiomethyl-5-methylthio-2-pentenal. One of ordinary skill in the art would not have predicted or expected that the claimed amount of the basic compound would provide for superior (i.e., reduced) amounts of the by-products with high boiling point, 3-hydroxy-2-methylthiomethyl-4-pentenal and 2-methylthiomethyl-5-methylthio-2-pentenal, based on the teachings of Hunt et al. and GB '961.

In the Office Action of December 11, 2008, the Examiner states that Comparative Example 1 in the specification shows the contrary to Applicants' arguments that the claimed process yield unexpected result, that is, less by-product.

However, as noted above, Comparative Example 1 clearly shows higher percentages of the by-products with high boiling point, comparing with Examples 1 and 2.

The Examiner further states that Applicants failed to provide a side-by-side comparison of their process and that of the prior arts process.

The Examiner further states that Applicants failed to provide a side-by-side comparison of their process and that of the prior arts process.

Applicants respectfully disagree.

Comparative Examples 1 and 2 of the specification employed a mixture of an acetic acid and a pyridine having a molar ratio of acetic acid/pyridine of 1/0.51, which ratio is the same as that employed in Example 1 of GB '961, the closest example in the art. Accordingly, Comparative Examples 1 and 2 are representative of Hunt et al. and GB '961.

In view of the above, Appellants respectfully request reversal of the foregoing §103(a) rejection based on Hunt et al. in view of GB '961.

Allowance is respectfully requested.

Respectfully submitted,


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